

REMARKS

Claims 1, 3 through 10, 14 and 16 through 20 are pending in the case.

Claims 2, 11 through 13 and 15 have been canceled.

Claims 1 and 14 have been amended.

Claims 1, 3 through 10, 14 and 16 through 20 have been rejected.

Response to New Arguments Raised by Examiner

Examiner has asserted: "Ellens et al. disclose the InGaN chip emits a peak wavelength of 300 to 430 nm, which is the UV to blue color range (Col 1, lines 38-48)." Examiner's assertion is contradicted by information in Ellens and by generally understood knowledge in the art. For example, Ellens at column 2, lines 36 through 42 gives generally understood wavelengths for UV (300 to 430 nm) and blue (440 - 480 nm). Ellens makes it clear that emissions of light by the LED are in the UV range (380 to 420 nm) and not in the blue range (440 - 480 nm). Applicant has amended the claims to particularly specify blue light with peak wavelength within a range from 460 nanometers (nm) to 480 nm. Applicant believes this is mere clarification, so should raise no new issues in the case.

Examiner has asserted that Ellens discloses yellow phosphors at column 3, lines 1 through 4 and column 4, lines 39-40. However, the existence of a yellow phosphor does not disclose the subject matter of claim 1. Ellens does not disclose or suggest yellow phosphor in combination with red or green phosphor included in an epoxy over a light emitting diode as required by claim 1 of the present case.

For example, at column 3, lines 1 through 4, Ellens states: "Yellow-luminescing Ce.sup.3+ -doped garnets lose approximately 10-30% of the room temperature efficiency at elevated temperature, depending on the proportion of Gd:Y and Al:Ga." This is merely the description of characteristics of a particular yellow phosphor. Ellens does not disclose or suggest, at column 3, lines 1 through 4 or elsewhere, yellow phosphor in combination with red or green phosphor included in an epoxy over a light emitting diode as required by claim 1 of the present case.

At column 4, lines 39 through 40, Ellens discusses layers 25 (see Figure 2 of Ellens) accessible to UV radiation. Ellens indicates conversion layers 25 consist of phosphors that emit in the yellow, green and blue spectral regions. However, as is clearly seen from Figure 2 of Ellens, conversion layers 25 are on the reflective surfaces on the inside of a box, and are not in an epoxy over a light emitting diode as required by claim 1 of the present case.

Rejection of the Claims

Examiner has rejected claims 1, 3, 5 through 10, 14 and 16 through 20 under 35 U.S.C. § 102 (e) as being anticipated by USPN 6,674,233 (Ellens).

Examiner has rejected claim 4 under 35 U.S.C. § 103 (a) as being unpatentable over Ellens in view of USPN 6,252,254 (Soules). Applicant respectfully traverses the rejections.

Each of the independent claims 1 and 14 sets out subject matter not disclosed or suggested by the cited art. Below, Applicant identifies subject

matter in each independent claim not disclosed or suggested by the prior art. On the basis of this Applicant believes all the claims are allowable.

Discussion of Independent Claim 1

Claim 1 sets out a light generating device that includes a blue light emitting device. An epoxy is placed over the light emitting device. The epoxy includes a first type of phosphor, and a second type of phosphor. The first type of phosphor, when excited, emits either green light or red light. The second type of phosphor, when excited, emits yellow light. This is not disclosed or suggested by the cited art.

Examiner has suggested this combination is disclosed by Ellens at column 4, lines 12 through 13, column 5, line 36, column 4, lines 22 through 25, column 5, line 51 and column 4 lines 29 through 32. However, the segments cited by Examiner fail to disclose the subject matter set out in claim 1.

For example, claim 1 sets out a blue light emitting device. However, column 4, lines 11 through 13 disclose use of a UV (400nm) light source, not a blue light source.

Further, at column 5, line 51, Ellens does not disclose use of YAG:Ce in a mixture. Rather, Ellens only indicates the suitability of Ce-doped sialong phosphor for lucoleds and having illumination comparable to YAG:Ce. However, Ellens does not disclose or suggest using YAG:Ce in the described phosphor mixture.

At column 4, lines 39 through 40, Ellens discusses layers 25 (see Figure 2 of Ellens) accessible to UV radiation. Ellens indicates conversion layers 25 consist of phosphors that emit in the yellow, green and blue spectral regions. However, as is clearly seen from Figure 2 of Ellens, conversion layers 25 are on the reflective surfaces on the inside of a box, and are not in an epoxy over a light emitting diode as required by claim 1 of the present case.

In short, claim 1 describes use of a blue light covered by an epoxy that includes yellow phosphor and either a green or red phosphor. Ellens only describes use of green or red phosphor in combination with a UV light.

Ellens does not disclose or suggest use of green or red phosphor in combination with a blue light. Ellens does not disclose or suggest use of an epoxy consisting of green or red phosphor in combination with a yellow phosphor. So it is clear that Ellens does not disclose or suggest use a blue light covered by an epoxy that includes a yellow phosphor and either a green or red phosphor as set out in claim 1.

Discussion of Independent Claim 14

Claim 14 sets out a light generating device. An emitting means emits blue light. A holding means for holds a first type of phosphor and a second type of phosphor adjacent to the emitting means. The first type of phosphor, when excited, emits either green light or red light. The second type of phosphor, when excited, emits yellow light. This is not disclose or suggested by the cited art.

Examiner has suggested this combination is disclosed by Ellens at column 4, lines 12 through 13, column 5, line 36, column 4, lines 22 through 25, column 5, line 51 and column 4 lines 29 through 32. However, the segments cited by Examiner fail to disclose the subject matter set out in claim 14.

For example, claim 14 sets out an emitting means for emitting blue light with peak wavelength within a range from 460 nanometers (nm) to 480 nm. However, column 4, lines 11 through 13 disclose use of a UV (400nm) light source.

Further, at column 5, line 51, Ellens does not disclose use of YAG:Ce in a mixture. Rather, Ellens only indicates the suitability of Ce-doped sialong phosphor for lucoleds and having illumination comparable to YAG:Ce. However, Ellens does not disclose or suggest using YAG:Ce in the described phosphor mixture.

At column 4, lines 39 through 40, Ellens discusses conversion layers 25 (see Figure 2 of Ellens) accessible to UV radiation. Ellens indicates conversion layers 25 consist of phosphors that emit in the yellow, green and blue spectral regions. However, as is clearly seen from Figure 2 of Ellens, conversion layers 25 are on the reflective surfaces on the inside of a box, and are not held adjacent to the emitting means as required by claim 14 of the present case.

In short, claim 14 describes use of a blue light in combination with a yellow phosphor and either a green or red phosphor. Ellens only describes use of green or red phosphor in combination with a UV light.

Ellens does not disclose or suggest use of green or red phosphor in combination with a blue light. Ellens does not disclose or suggest use of green or red phosphor in combination with a yellow phosphor. So it is clear that Ellens does not disclose or suggest use a blue light in combination with a yellow phosphor and either a green or red phosphor as set out in claim 14.

Conclusion

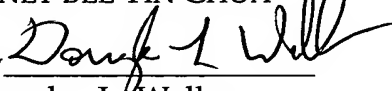
Applicant believes this Amendment has placed the present application in condition for allowance and favorable action is respectfully requested.

Respectfully submitted,

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By



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